

Alcohol Consumption in India:

A Cross-Sectional Study

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Background

India is one of the largest democratic and a secular country in South Asia occupying almost 3% of the world's land area but supporting 866 million people (16.2% of the world's population). The society is multilingual, multi-religious and multiethnic. India's economy is mostly agrarian. There are 18 official languages in India, besides numerous local dialects in 25 states. The majority of Indian people live in rural areas (74%), about 52% are illiterate and 38% live below the poverty line. India has an annual per capita income of US \$330 and belongs to the low-income economies of the world (World Bank Report, 1993).

Besides the use of cannabis and opium, alcohol consumption has been in existence in India for many centuries. However, the overall quantity, patterns of use and problems resulting from this consumption have shown significant changes during the last two decades. Data on alcohol-related problems are still scarce in India, with very few scientific comparable studies conducted so far. Alcohol production and sales data are also difficult to collect and collate for the Country, as these are not centrally compiled. Significant regional, cultural, gender and social class differences exist in the country which limits generalization of the results that are usually based on small cross-sectional representative samples. Despite these shortcomings, this study attempts to describe alcohol consumption patterns and associated problems in three different districts in India to describe the situation.

Historical background

Alcoholic beverages have been mentioned in ancient Indian literature (Chopra & Chopra, 1965; Prakash, 1961; Dikshitar, 1951; Charak Samhita, 1949). Alcohol is also an ingredient in many medicinal preparations in the traditional Indian system of medicine. But in spite of alcoholic beverages being known and available, these have never been a part of staple food in India. There were always strict rules and guidelines on who is allowed to drink and under what circumstances. Manu, for instance, strictly forbade drinking by Brahmins whereas other classes of society were allowed to drink, but only on specific occasions (like wars, religious events and festivals). Abstinence was considered the norm for

the common man (Tekchand, 1972). Historical evidence suggests that alcohol use did not pose a significant health or social problem in ancient and medieval periods in India.

Under British rules, India witnessed a slow and steady rise in licit alcohol availability and consumption. There was a change in the types of beverages consumed, in the patterns of drinking as well as in the attitude of the society towards drinking alcohol, which continued even after India attained independence. The use of plant products such as cannabis and opium decreased in rural areas where agricultural advances took place and these products were replaced by alcohol (Deb, 1975). Home brewed alcohol remained a cottage industry and distilled beverages with higher concentration of alcohol gradually replaced traditional beverages. Better fermentation and distillation processes and packaging technology resulted in alcoholic beverages becoming a mass produced commercial item and improved intra-country transport facilities contributed to its easy availability.

Current scene

General population studies conducted in different parts of the country suggest prevalence rates of use of alcoholic beverages ranging between 23% and 74% among males. Women constitute over 90% of abstainers, though among tribal groups and tea plantation workers, there is a substantial number of alcohol users in women, with prevalence rates ranging between 28% and 48%. India is likely to face a heavy burden of medical and social problems due to increased alcohol consumption.

Settings of use

In both rural and urban settings in India, among folks or the elite, no significant normative patterns of drinking have yet emerged that could be held valid at national level. There is nevertheless a visible change in the pattern of drinking, as it has changed from ritualistic and occasional to a part of routine social interaction and entertainment. In general, alcohol is used only rarely for convivial purposes or in the evenings before dinner. The basic purpose of drinking alcohol is to get drunk as quickly as

possible and to stay drunk for as long as possible. This motivation is reflected among those between 25 and 40 years of age seeking treatment. In the Western and Southern parts of India, public bars and pubs have emerged and norms are thus only beginning to evolve.

Types of Alcoholic Beverages

India varies in its topography, climate, vegetation, culture and traditions. Therefore, different types of alcoholic beverages are consumed which can be broadly divided into the following categories. India made foreign liquor (IMFL) consists of whisky, rum, gin and brandy, with a 42.8% maximum alcohol content permitted. Whisky is the most popular drink in this category. Country liquor is a distilled alcoholic beverage made from locally available cheap raw material such as sugarcane, rice, palm, coconut and cheap grains with alcohol content around 40%. Common varieties of country liquor are "*arrack*", "*desi sharab*" and "*tari*" (toddy). Illicit liquor is mostly produced clandestinely in small production units with raw materials similar to that used for country liquor. With no legal quality control checks on them, alcohol concentration of illicit liquor varies (up to 56%). Adulteration is quite frequent, industrial methylated spirit being a common adulterant, which occasionally causes incidents like mass poisoning with consumers losing their lives or suffering irreversible damage to the eyes. Cheaper than licensed country liquor, illicit liquor is popular among the poorer sections of the population. In many parts of India, illicit production of liquor and its marketing is like a cottage industry with each village having one or two units operating illegally.

Besides these, home production for self-consumption is also common in some parts of India. Lal and Singh (1978) observed that 45% of inhabitants reported producing their own liquors at home for personal consumption. Home fermentation and distillation is also common in several tribal areas in the country, especially the Northeast region of the country. Lastly is beer, with an alcohol content ranging between 5% and 9% and whose production and consumption is rapidly increasing.

The government health sector has laid emphasis on the creation of awareness and on the development of a basic infrastructure for treatment in the different states regarding this problem. In order to get a scientific database with comparable research methodology and applicability, the Health Ministry initiated pilot projects at three sites, namely Barabanki (UP), Mandsaur (MP), and Thoubal (Manipur). The database described in the following pages has been created from these three districts of India in 1996-97. A district is the lowest basic administrative unit in India. For convenience and developmental activities, it is further broken up into smaller units: Tehsils, blocks and villages. All three districts were surveyed using the same sampling procedures, with a response rate of 100%. In each district, 240 areas were surveyed with the goals of determining the magnitude and providing prevalence estimates of substance abuse disorders according to the DSM-III-R criteria. The division of 240 units into rural and urban areas was in proportion to their total weight within the district. Under rural and urban sectors, further areas were selected by proportional probability sampling techniques. About 50 households in each village were contacted in a systematic fashion, i.e. one every fifth or seventh households, depending on the total number of households in the village, was selected for an interview. A standardized questionnaire based on DSM III-R criteria was used. Because the three surveyed areas can in no ways be assumed to be representative of overall India, area-specific figures will be reported separately. Overall, 12,157 individuals from Lucknow, 10,296 from Mandsaur and 9566 from Thoubal were surveyed.

Study population

Mandsaur district

Mandsaur is an important district in the state of Madhya Pradesh in Central India. It has a total population of 1.5 million spread over 1580 villages and 17 towns. The district has 8 tehsils and an equal number of developmental blocks. About 70% of the population resides in rural areas. Under the Single Geneva Convention, it is allowed to cultivate opium legally over an area of 12,000 hectares.

The population in Mandsaur is economically backward with no or minimal educational achievements. The population includes varied ethnic subgroups belonging to different castes, some lower in the hierarchy of the social order like the Bawri, Chamar, Ahir, Kumhar, Darji and Gairi who carry out menial labor jobs, animal keeping, making of mud utensils, etc. The higher caste, the Thakurs and Rajputs are the landlords of the area. There are also some tribal sub-groups like the Bhils and the Banjaras. A village is generally divided with higher caste residents living on one side and lower castes on the farther end of the village. Most of the population is composed of agricultural laborers leading a hand to mouth existence and for whom raising the family is more important than spending money on alcohol. The village council also acts as the local guardian by discouraging excessive alcohol use by not allowing, for instance, excessive alcohol users to maintain their residence in the village. However, there are specific caste groups like the Rajputs, Yadavas, Meghvar who drink alcohol more than the other castes. Drinking occasions are associated with conviviality, being a good host and welcoming a guest. Individuals also perceive alcohol drinking as a means of recreation after a hard labor day in the fields. Alcohol drinking is generally done at home.

Barabanki district

Barabanki is an adjoining district of Lucknow, state capital of Uttar Pradesh. It has 2.42 million population, spread over 2087 villages in six tehsils and 16 developmental blocks. Predominantly a rural area (90%), the culture of raw opium in Barabanki is widely spread and the area has emerged in recent years as a major drug trafficking area. Use of country liquor is also prevalent, though most of the villages do not have liquor vends. The district characteristics are similar to that of its adjoining state outlined above.

Thoubal district

This district lies in valley region of the Manipur State in the Northeast of India. It has a population of about 3.0 millions under three Tehsils and twelve blocks. About 65% of the population resides in rural

areas. The district lies on the transit route of drug trafficking especially from Myanmar. Various ethnic groups that belong to different tribes each with a specific dialect occupy the region. The population is economically backward, mostly illiterate. The predominant occupation is cultivation and fish farming for men and cloth weaving for women. Thoubal district comprises tribal groups (about 8.8% of the total population of the country) among which traditional drinking patterns are prevalent. Both among the men and women, alcohol is viewed as a natural product, a gift of the god viewed both as food and medicine. It is mostly home brewed, with low alcohol content. The tribal groups have their own beliefs and attitudes for alcohol consumption in the day-to-day life. However, with planned economic development and widening contact of tribal groups with those from other parts of the country, distilled beverages are also becoming common for officially licensed liquor vendors. The use of alcohol usually begins after a farmer returns from the field and continues till late evening. No mode of entertainment available is the most commonly cited reason for its use.

Survey methodology

A key informant, usually the head of the household, was interviewed for himself and on behalf of his family, for information on drug consumption, including alcohol, tobacco, cannabis and opioids. The information gathered using key informants was pilot-tested using cross validation with each individual in the household in a sub-set of respondents (n=1987), with high Kappa coefficients for concordance (Mohan *et al.*, 1992). To further ensure the validity of the information on frequency and quantity of alcohol consumption, this manuscript reports only on patterns of use of the primary respondent, namely the head of the household. All questionnaires were further checked for coding and other errors.

Measures of alcohol consumption

All data are from self-reports of individuals. The quantity and frequency of drinking questions were asked for the past 30 days, as this was easier to recall from memory. For those whose answers were

positive for the past 30 days, questions on various problems due to alcohol use were further asked. A bottle of beer has 650 milliliters (ml) of contents with 26 ml (4%) of absolute alcohol. This means that a self-reported quantity of a bottle of beer was worked out as 13 ml of absolute alcohol whereas two bottles would be considered equivalent to 52 ml of pure alcohol. The same algorithm was used for toddy and wine. When consumption of more than 4 bottles was reported, the drinker was considered to have had 182 ml of pure alcohol. A bottle of India Made Country Liquor (IMCL) has 750 ml contents and contains 300 ml (40%) of absolute alcohol. Therefore, half a bottle was considered as being equivalent to 150 ml of pure alcohol whereas up to 1/8 of a bottle was considered as 37.3 ml of absolute alcohol.

Current drinkers were defined as those who report drinking in the last 30 days based on the following question: "What has been your usual quantity consumed on one drinking occasion during the past month?" with the possibility of answering 'Never' or the reported quantity, by type of beverage. For each beverage quantities, the respondent was asked to estimate its frequency of drinking such a quantity with the following possible answers:

- ♦ Less often than once a month
- ♦ Once a month
- ♦ 2-3 times a month
- ♦ Once a week
- ♦ Several times a week but not daily
- ♦ Daily
- ♦ Several times a day.

The quantity-frequency specific measure was used to estimate the monthly volume. Heavy drinkers were defined as those consuming 75 ml or more of absolute alcohol.

Drinking problems

The respondents were also asked whether they encountered the following drinking problems derived from the DSM III-R criteria:

- ♦ Can not limit use
- ♦ Preoccupied with drinking
- ♦ Given up social, occupational or recreational activities

- ♦ Often intoxicated when required to fulfill major obligations
- ♦ Drinks despite having physical/psychological problems
- ♦ Unable to cut down on drinking
- ♦ Increased the amount of alcohol intake to get the same effect
- ♦ Experienced three or more withdrawal symptoms
- ♦ Withdrawal avoidance.

Abstention rates and frequency of drinking

The abstinence rate among women was observed to be above 97%. For that reason, only drinking patterns among males are presented. Table 1 shows that the prevalence of drinking in the last month among males ranged from 20.8% at Mandsaur to 37.5% at Thoubal. Drinking patterns alter with age. Up to 20 years males included fewer current drinkers than any other age categories. The proportion of current drinkers in Lucknow and Mandsaur increases with increasing age, up to 50 years where it starts to decline. In Thoubal, the highest proportion of current drinkers (42.9%) is in the 30 to 49 years of age group.

Heavier drinking

Among current drinkers, the prevalence of high monthly quantities of alcohol is very high, ranging between 66.7% and 92.9% in young men from Lucknow and Mandsaur respectively. Age was not strongly correlated with the prevalence of heavier drinking in any of the three sites.

Drinking problems

The prevalence of alcohol-related problems in the three investigated areas of India seems to be relatively high (Table 2). Overall, current drinkers from Thoubal reported alcohol-related problems in higher proportion than did those in the other two sites. For instance, 81.1% of men (versus 58% in Lucknow and Mandsaur) reported not being able to limit their use of alcohol and 80.3% reported being often intoxicated when required to fulfill major obligations (versus 62.8% in Lucknow and 43.4% in Mandsaur). Also, men from Thoubal were more numerous to report being unable to cut down on drinking (51.1%) and to have increased their amount of alcohol intake (44.4%). Finally, the prevalence of having reported giving up social, occupational or recreational activities was very low in Mandsaur (5%) whereas this prevalence was 35.3% in Lucknow and 40.1% in Thoubal. Among heavy drinkers, these prevalence rates also showed to be higher in Thoubal, compared to Lucknow and Mandsaur. Surprisingly, prevalence rates were not higher among heavier drinkers that they were among all current drinkers and all trends were as a consequence, similar.

Alcohol consumption has been reported in India since ancient times but trends in the patterns and prevalence of use as well as alcohol-related problems have not been systematically studied. The Indian economy primarily is agrarian and monsoon dependent. About 40% of the population is at the subsistence levels, therefore homebrew from rice, millet and sugarcane are commonly consumed alcoholic beverages (alcohol content: 4-5% absolute ethanol). These are however believed to have changed over the past two decades. Distilled alcoholic beverages are most frequently consumed, with beer becoming more popular among young people. Besides these, illicit and locally brewed alcohol account for more than half of alcohol consumed, in terms of quantities. The policy of economic liberalization recently initiated by the government has allowed entry in India of national and multinational alcoholic brands especially spirits. This has led to a shift in beverage preference and a corresponding increase in the quantities of absolute alcohol consumption consumed.

The survey data shows that the prevalence of current alcohol use ranges between 20% and 38% among males which is also reflected in various epidemiological studies conducted during the last two decades (Deb & Jindal, 1975; Dube & Handa, 1971; Dube *et al.*, 1978; Elnagar *et al.*, 1971; Mohan *et al.*, 1978; Mohan *et al.*, 1979; Mohan *et al.*, 1980; Sethi & Manchanda, 1977; Sethi & Trivedi, 1979; Varma & Dang, 1980; Varma *et al.*, 1980). Among women, abstinence is still a cherished value and more than 90% of them remain abstinent. Interestingly, Thoubal have the highest prevalence of current alcohol use in the population compared to the other two districts. Despite this low prevalence of current use, heavy drinking is rather frequent among current users of alcohol.

In the three studied districts, current drinkers appear to experience lots of problems, probably due to a very high prevalence of heavy drinkers. Although comprehensive scientific evidence for alcohol-related health and social problems in India is lacking, the present data suggest indications that these are substantial. Rapid increase in alcohol consumption shall raise the probability of further increase in these problems in the coming years. No control of self drinking, preoccupation with drinking, neglect of

duties under the influence of alcohol and a much larger number of men unsuccessfully attempting cutting down on their drinking were some of the problems frequently reported.

A distinct "drinking culture" may not be on the social canvas but the way in which social and economic forces are working may lead to drinking patterns which are likely to cause more adverse health consequences. According to Room (1989), India lies in the category of "dry cultures" but there is a tendency among those who drink to indulge in very heavy drinking. It should be noted here that India should be viewed as having a minority of current drinkers and among them, a majority of heavy drinkers.

Our study however carries important limitations that should be weighted for when attempting drawing conclusions on drinking patterns in India. For instance, our study population can in no way be assumed to represent the general population due to different age and gender structures, as well as to a high variability across regions. Also, only users of any intoxicant substances were retained as potential respondent. Despite these limitations, the available evidence suggests high levels of drinking and associated health and social problems are present among those who drink.

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Table 1

Prevalence of current drinking (have had a drink in the last month) (%) and of heavy drinkers (%) among male current drinkers, by region and age

	PREVALENCE OF CURRENT DRINKERS (LAST MONTH)		PREVALENCE OF HEAVY DRINKING AMONG CURRENT DRINKERS	
	n	%	n	%
LUCKNOW (YEARS)				
Overall	12157	27.1	3374	79.7
15-19	247	17.0	242	66.7
20-29	2146	23.5	504	81.3
30-49	6323	30.9	1955	79.2
50 and more	3441	19.6	673	79.9
MANDSAUR (YEARS)				
Overall	10296	20.8	2146	87.9
15-19	410	3.4	14	92.9
20-29	2550	17.8	453	88.9
30-49	4843	24.3	1177	89.5
50 and more	2493	20.1	502	83.3
THOUBAL (YEARS)				
Overall	9566	37.5	3584	89.0
15-19	114	11.4	13	92.3
20-29	1570	37.7	592	90.9
30-49	5217	42.9	2238	90.1
50 and more	2665	27.8	741	84.1

Prevalence of drinking problems (%) among male current drinkers and heavy drinkers, by region

	CURRENT DRINKERS			HEAVY DRINKERS		
	LUCKNOW (n=3374)	MANDSAUR (n=2146)	THOUBAL (n=3584)	LUCKNOW (n=2689)	MANDSAUR (n=1887)	THOUBAL (n=3189)
Can not limit use	58.3	58.5	81.1	68.0	62.7	82.4
Preoccupied	21.3	25.2	40.1	24.6	26.9	42.3
Given up social, occupational or recreational activities	35.3	5.0	40.1	42.2	5.1	42.9
Often intoxicated when required to fulfil major obligations	62.8	43.4	80.3	71.0	45.8	83.5
Drinks despite having physical/ psychological problems	58.4	39.8	66.5	65.7	41.7	64.5
Unable to cut down on drinking	32.6	34.5	51.1	35.8	36.0	50.6
Increased the amount of intake to get the same effect	26.3	27.7	44.4	31.1	30.2	47.4
Experienced 3 or more withdrawal symptoms	23.2	40.4	36.8	25.2	41.8	37.0
Withdrawal avoidance	23.8	43.3	35.7	25.9	45.1	34.6

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Anita Chopra

She has a Masters degree in psychology and works as a research officer in the Drug Dependence Treatment Center. She is coordinating the epidemiological work and research reports being carried out by the Center at various sites across the country. Her interest in epidemiology has seen her involved in the research work on drug dependence carried out by the Department of Psychiatry. She has many publications to her credit.

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He holds a Masters degree in Statistics. He specializes in computer programming and works as a research officer in the Drug Dependence Treatment Center. He is responsible for the sampling procedures, data entry and validation, statistical analysis of the data and production of research reports of the epidemiological research realized at the Center. He also has many publications to his credit.

Rajat Ray

He is a psychiatrist and a member of the Drug Dependence Treatment Center at the All India Institute of Medical sciences, New Delhi. He is currently involved in treatment and supervision of clinical services of drug dependents, training of students and medical professionals. He has visited countries and represented India in relation to academic growth. He is currently a member of various advisory committees and has reviewed several papers. He has authored and edited several books and articles in various journals.